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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,003	04/14/2004	Donald R. Krause	NG-32020(1)	5953

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EXAMINER

PADGETT, MARIANNE L

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/824,003

Applicant(s)

KRAUSE ET AL.

Examiner

Marianne L. Padgett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 4/14/04, 7/20/04, 11/19/04, 3/25/05, 9/16/05, & 10/8/05
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-87 is/are pending in the application.
- 4a) Of the above claim(s) 6-8, 16, 18, 21, 22, 43, 51, 58, 65 and 71-87 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-15, 17, 19, 23-42, 44-50, 52-57, 59-64 and 66-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/20/04, 11/19/04, 3/25/05 & 10/8/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. Applicant's election without traverse of Group I method claims 1-42, 44-50, 52-57, 59-64 & 66-70, where species A-ii (UV) + B-iv (rotary screen) in the reply filed on 9/16/2005 is acknowledged.

Applicants' addition of "rotary screen" to the options of species B is noted with their citation of support on p. 9 (lines 4-6) of the specification, such that it appears to the examiner that coating unit 18 of fig.1 illustrates this rotary screen option, which would appear to therefore include claim 5 or any type of printing that employs such a cylinder with attached patterning plate/screen/inset or the like.

Method claims directed to non-elected species are claims 6-8, 16 & 18, 20-21.

Applicants request to "cancel Groups II and III" on the top of p. 2 of the 9/16/05 response is noted, however cancellation of claims can only be made by applicant via formal amendment, & the examiner could only do so on allowance of the case, hence non-elected claims as still pending, but withdrawn.

2. Claims 1-5, 9-15, 17, 19, 23-42, 44-50, 52-57, 59-64 and 66-70 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

On page 2 of the specification, lines 2-, it states "An interlaced image is a composite of two or more component images that are themselves preferably of photographic quality", however the examiner is unclear as to what this means with respect to the scope of the claims. Does "interlaced image" require 2 different figures to be printed on top of each other, or can it include besides or the like; or is it inclusive of printing techniques, such as for color pictures/image that deposit/print each color separately in order to form the final image; or is it even inclusive of anything typed, since each letter or figure may be called a separate image? Lacking a specifically cited prior art showing of what is the clear scope of this term as applied or intended in the claims, the claims are considered to be vague & indefinite, and any image that might be construed to be within the possible scope of the claimed phraseology will be considered to read on this limitation.

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Claims 2, 45, 53, 60 & 67 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. All of these dependent claims require the "...formed lenticular image" which has already been described as being made of cured material to be cured, hence it is unclear what if anything is being cured or remains to be cured, in these claims as written, i.e. as the preceding required independent claim limitation may mean curing is already complete, further claiming some thing that is already done is improper. If applicants intended that the initial curing was only a partial curing, clarifying language, if supported, is recommended.

In claim 19, "chemically reactive" in what way or with what? Essentially almost all materials can be chemically reactive under the right conditions, so this claim is either so broad as to be almost all inclusive, or it is vague and indefinite as to scope intended to be claimed.

In claim 35, the phrasing "less than about" is technically contradictory, as "about" includes values that are greater than 10 mils, while "less than" requires them to all be excluded. Use of alternative phrasing, such as "or" can remove the contradiction. By "gauge thickness", the examiner assumes that applicants mean the thickest point on the relief patterned lenticular film, i.e. the thickness of the dome shape, not the recessed portions.

In claim 39, the examiner is unclear how the "pitch" can be defined by the number of lenticels, since the examiner knows of no meaning thereof that is defined by a discrete # of things, but the meaning associated incline or slope might make sense. Clarification is desirable.

In claim 42, "charged area" is ambiguous, as it is uncertain if charge is referring to electrical charge, i.e. electrostatic or positive or negative; or to charged with coating material.

3. The examiner notes that "conform" is defined on p.11, lines 17-23+, hence provides definition of the term as it is used in the claims

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4. The attempt to incorporate subject matter into this application by reference to USPN 6,424,467 B1 is ineffective because it is improper to incorporate a reference that incorporates other references.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-5, 9-14, 17, 19, 22-38, 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quadracci et al (5,457,515), in view of Christie et al (5,128,385), optionally further considering Sekiguchi et al (5,695,346) for a more specific meaning of "interlaced".

Quadracci et al (5,457,515) teach several embodiments, where those of fig.8-9 described on col.11, lines 43-col.13, line 24 are of interest. A "precursor image web 34", which may be paper & is inclusive of a back side & a 3-D printed side, with image elements 26 printed via conventional printing techniques, that will be aligned, i.e. conformed to the applied lenticular lens coating (col.5, lines 15-57; colo.6, lines 48-55+; col.7, lines 10-40). As illustrated in fig. 8-9 the printed web may be coated with a curable flowable or resin source which is spot or selectively applied, possibility by an anilox plate cylinder system, direct gravure, flexographic & various combinations; and cut relief patterned with

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desired lenticular pattern either with application on the web or after deposit, where thereafter it is cured, possibly by UV, although other curing techniques, such as chemical, drying, IR or ultrasonic are mentioned as usable. Col.13, lines 50-56 note that different typed of curable resins may be used in Quadracci et al (515) 's process. Quadracci et al (515) also teaches the possibility of the use of multiple layers (fig.10, col.12, lines 25-39, 3 layers) to build up the spot lenticulation, as well as the option of using the lenticular images with other printing without lenticular coating thereon (col.13, lines 12-22). It is taught to make the lenticular web to the correct "pitch and thickness to provide the viewer with the illusion of 3-D" and exemplary lenticels /inch are given as 135 or 200 or at least 100 or at least 300 lines/in., with discussion on the effects of curvature of the lenticels, cross-sectional dimensions & focal length (col.8, lines 7-35+; col.10, lines 24-41; col.13, lines 26-49), hence while there was no "gauge thickness" values found taught, it would have been obvious to one of ordinary skill in the art given these teachings to determine via routine experimentation useful values thereof to provide the desired effects, which may be expected to be within claimed range values given the overlapping values of lenticels/inch which applicants call pitch & its association in Quadracci et al (515)'s teachings with pitch thickness & visual effects.

Quadracci et al (515) differs by not requiring any curing before the shaping or embossing or the lenticular pattern in the resin, however Christie et al (385) teach that an initial curing &/or drying step to extend the polymeric chains, exemplified by moisture curing, followed by embossing, then actinic (UV) complete the cure, enable formation of sharper deeper embossing (col.1, lines 20-40 & 51-65; col.3, lines 36-60; & col.4, lines 7-68+. esp. examples 1 & 2), hence it would have been obvious to one of ordinary skill in the art to provide some form of initial partial cure appropriate to the applied resin before the lenticular shaping in order to effect shaper lens formation, thus improving resultant product image quality as suggested by Christie et al (385)'s teachings.

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Quadracci et al (515) also doesn't detail the conventional printing techniques employed for the image printing, however other coating layers in the overall process do suggest useful printing techniques that are conventional ones, hence may be considered obvious to one of ordinary skill in the art for the image printing as suggested by Quadracci et al (515)'s teaching to use conventional printing techniques.

Sekiguchi et al (5,695,346) is cumulative to Quadracci et al (515), in view of Christie et al (385), for showing the types of images, such as composites of several images variously described as superimposed or interleaved or interlace or the like, which are analogously employed with lenticular lens coatings to produce not just the illusion of 3-D, but also of motion (abstract; fig.220-223; col.2, line 47-col.3, line10; col. 4, lines 1-7; col.49, line 32-col.50, line 13; & claims 8-20), hence it would have been obvious to one of ordinary skill in the art that this particular type of printed image as described in Sekiguchi et al (346) would have been equivalently treatable by the above discussed technique, as the materials involved are independent of the specific printed picture & optimization for the specific effect of the lenticular covering on the images would have been expected to require equivalent routine experimentation to determine useful parameters for desired effects.

7. Claims 15, 44-50, 52-57, 59-64 & 66-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quadracci et al (515), in view of Christie et al (385), optionally considering Sekiguchi et al (346) as applied to claims 1-5, 9-14, 17, 19, 22-38, 39-42 above, and further in view of Sandor et al (5,330,799).

While Quadracci et al (515), in view of Christie et al (385) teach other curing techniques, different typed of curable resins may be used & use of multiple layers, they do not specify an initial cure being UV or detail the curing sequence when multiple layers are employed for the lenticular coating, however Sandor et al (799) who has analogous teachings to Quadracci et al (515) with respect to forming a U V curable lenticular coating over similar printed images, discloses multilayer deposition sequences that may be (UV) cured between individual coating applications & discloses the use of polymer layers

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for the lenticular coating that may be cured in 2 stages, and while the stages differ by curing with application of the shaping means, then thereafter completing the cure, the effect is analogous as desired by Christie et al, in that the first use of UV lamp curing effectively prevents loss of embossed resolution, hence it would have been obvious to one of ordinary skill in the art given Quadracci et al (515)'s teaching of the use of other resins & curing means to employ resins as used in Sandor et al (799), which may be cured in 2 UV curing step or stages to effect the taught curing before & after embossing as suggested by Christie et al (385) to provide the advantages of sharper embossed images in the relevant techniques of Quadracci et al (515). In Sandor et al (799), see the abstract; figures, esp. 2-3, 5, 8-9; col.1, lines 5-25; col.3, lines 21-61; col.4, lines 19-41; col. 5, line 33-col.6, line 18; col.8, lines 11-17 & 35-42; col.9, lines 19-38 & 64-col.10, lines 36 & 59-68; col.11, line 56-col.12, lines 26 & 56-68; and col.13, line 14-col.14, line 45.

8. Other art of interest includes: Steenblik et al (5,568,313 or 2003/0179364) for soft or hard embossing techniques, photopolymers holographic & interleaved images; D'Amato (6,440,277 B1) for relevant curing & embossing, where while all illustrated examples do so simultaneously, the paragraph bridging col.6-7 indicated coat, cure & emboss may be sequential; Palmasi et al (6,436,483 B2) & Conley (4,414,316 & 4,420,502) with further curing & embossing simultaneously; and Jonza et al (6,737,154 B2) with a generic discussion of a preference for resin coating, then embossing/casting then curing in holographic imaging (col.16, lines 3-10 & fig.15-16).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on M-F from about 8:30 a.m. to 4:30 p.m.

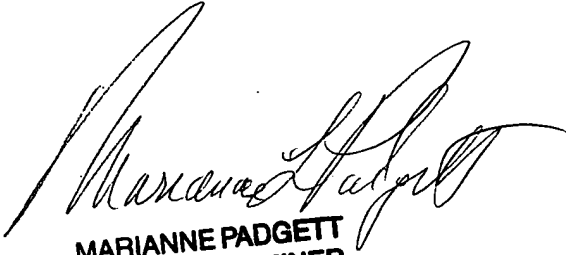
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks, can be reached at (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MLP 10/(6 & 13 & 14)/2005



MARIANNE PADGETT  
PRIMARY EXAMINER